from beneath human skin in the maggot stage, has a larva known to attain a length of slightly over half an inch.)

The Sarcophagids rarely cause human myiasis. There are two or three cases on record in the United States, covering a period of some years (one very recent), in which Sarcophagid larvae were removed from under the skin of infants. The "Review of Applied Entomology" lists a few human records for the past ten years, but these are nearly all Oriental, and are primarily of Sarcophagid larvae in the alimentary canal. Calliphorid larvae (similar flies) also cause human subcutaneous myiasis.

In larval food habit, the Sarcophagids are almost invariably connected with other animals. Some breed in excrement. Many feed on carrion and dead animals. Some are important insect parasites and some are parasites of warm-blooded animals. Insects of this type are continually annoying to the human animal, in one way or another; and the occurrence here recorded, while unusual, is entirely in line with the possibilities.

Medico-Dental Building.
Department of Agriculture.

## POLYCYTHEMIA VERA OF THE GEISBÖCK TYPE

*By* LAMBERT B. COBLENTZ, M.D.
AND
FERRALL H. MOORE, M.D.
*San Francisco*

BECAUSE of the relative rarity of polycythemia vera, and of certain interesting features, the following case is reported as one conforming to the so-called Geisböck syndrome of true polycythemia, hypertension, and absence of splenomegaly.

### REPORT OF CASE

The patient, a woman aged fifty-seven, was first seen on March 10, complaining of recurring vertigo, tinnitus, faintness, and visual blurring during the previous week. During this time she had had a hematemesis of an estimated cupful of blood on one occasion. The family history was not significant. The patient had suffered from migraine until the menopause, at age forty-eight. She had had seven pregnancies, unassociated with any toxemia so far as known, all delivering normally at term. There was no history suggestive of a previous glomerulonephritis. Hypertension had been discovered four years ago on routine examination, and the patient had been under the care of her local physician since. Nocturia, two or three times per night, had been present for three years. During the past year the patient, who had been obese, had reduced some forty pounds by diet. General and systemic histories were otherwise negative.

*Physical examination* revealed a slightly obese woman of stated age, with grey hair and ruddy complexion. The lips were cyanotic and the mucous membranes deeply reddened. Complete dentures were present. The tonsils were small, with chronic infection. The pupils were equal and regular, reacting normally to light and accommodation. Fundus examination revealed considerable narrowing and nicking of the retinal arterioles, with arteriovenous compression; the retinal veins were remarkably distended. A few scattered small hemorrhages were noted, as well as some cotton-wool patches and small areas of hard macular exudate. The discs were normal. The thyroid was not enlarged, and no adenopathy was noted. The lungs were negative, no emphysema being found. The heart was enlarged to the left, all tones were loud, and the aortic second was accentuated. Radial thickening, graded 2, was present; the blood pressure was 220 systolic, and 120 diastolic. Neither liver nor spleen were palpably enlarged at any time. Diastasis recti was present. The uterus and adnexa were small and atrophic, and moderate cystocele was found. There was no peripheral edema, and all peripheral arterial pulsations were normal. Neurological examination was negative. The provisional diagnosis made was that of Essential Hypertension Group 3 (Keith-Wagener); general and cerebral arteriosclerosis; cardiac hypertrophy; and possible polycythemia vera.

*Laboratory findings* were as follows: red blood cells, 8,560,000, hemoglobin, 145 per cent (Sahli); white blood cells, 14,500, with 79 per cent neutrophils, 1 per cent eosinophils, 2 per cent basophils, 15 per cent lymphocytes, and 3 per cent monocytes. No myeloid immaturity was found. The platelets on the stained smear were markedly increased both in number and size. The packed volume of red cells by hematocrit determination was 61 per cent. The blood volume (Rowntree-Geraghty) was 240 cubic centimeters per kilogram. The blood Wassermann was negative. Urinalysis revealed a specific gravity of 1.017, a trace of albumen, and a moderate number of hyaline casts. Glycosuria was not present. The blood sugar was 139 milligrams, and the NPN 71 milligrams per cent. Urinary concentration tests showed a maximum specific gravity of 1.016.

*Course.*—After twenty-four hours of bed rest and sedation, the blood pressure had come to a level of 180 systolic and 100 diastolic, but marked vertigo and tinnitus persisted. A venesection of 500 cubic centimeters was done. On the same day the patient had a hematemesis estimated at 500 cubic centimeters. Vertigo still being marked, and the pressure level remaining the same, another venesection, of 750 cubic centimeters, was done on the third day. Following this, the red blood cells were found to be 6,500,000, hemoglobin 118 per cent (Sahli), and hematocrit percentage 47. Several days later, on being allowed to sit up in her chair, the patient complained of dull substernal pain, radiating down the ulnar side of the right arm. Examination of the heart was negative, and an electrocardiogram showed only left axis deviation, slight elevation of the S-T segments in the first and third leads, and a diphasic T3. In the following days there was no further pain, no fever, and no audible friction rub. On the ninth day the NPN was 41 milligram per cent, and the patient felt much improved, being up and about the hospital with no further substernal pain save on one brief occasion. Due to the high incidence of vascular thromboses in these cases we endeavored to keep the patient ambulant so long as we deemed it consistent with her cardiac reserve. At the end of three weeks the pressure level had fallen to 130–150 systolic and 80–94 diastolic and vertigo did not recur. Fundus examination showed no change, save for diminution in size of the previously engorged retinal veins. The patient was dismissed from hospital on a regimen of rest, moderate, protein-low salt diet, and sedative medication. Because of the evidence earlier noted of impairment of renal function, it was deemed unwise to attempt control of the polycythemia by phenylhydrazine, which is somewhat slowly eliminated, or by irradiation, in the presence of only slight leucocytosis without myeloid immaturity. Accordingly, it was decided to control the red cell count by periodic venesections, and the patient was instructed to report to the office in two weeks for hematocrit determination, as well as for a gastrointestinal series to rule out any malignant cause for the hematemeses previously cited. At this time the packed red cell volume was 51 per cent and the blood pressure was 190 systolic and 110 diastolic; substernal pain on exertion had been present for several days. The venesection was deferred until later in the week, but the following morning one of us was called to see the patient at her home, and found her in shock, presenting the classical picture of sudden severe coronary occlusion. Death occurred several hours later. Permission for autopsy was not obtained.

### COMMENT

A case of polycythemia vera is presented, without splenomegaly, and associated with severe hypertension and renal insufficiency; the immediate response of all three conditions was favorable following venesections. Death occurred suddenly, some weeks later, from acute coronary occlusion.

384 Post Street.